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EDMONTON VOLUME FIFTEEN NUMBER FOUR SPRING 1993

ENVIRONMENT VIEWS

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For better or worse, we seem to be wedded to the automobile. But for some of us, it's a love-hate match.

Auto Restraint 9

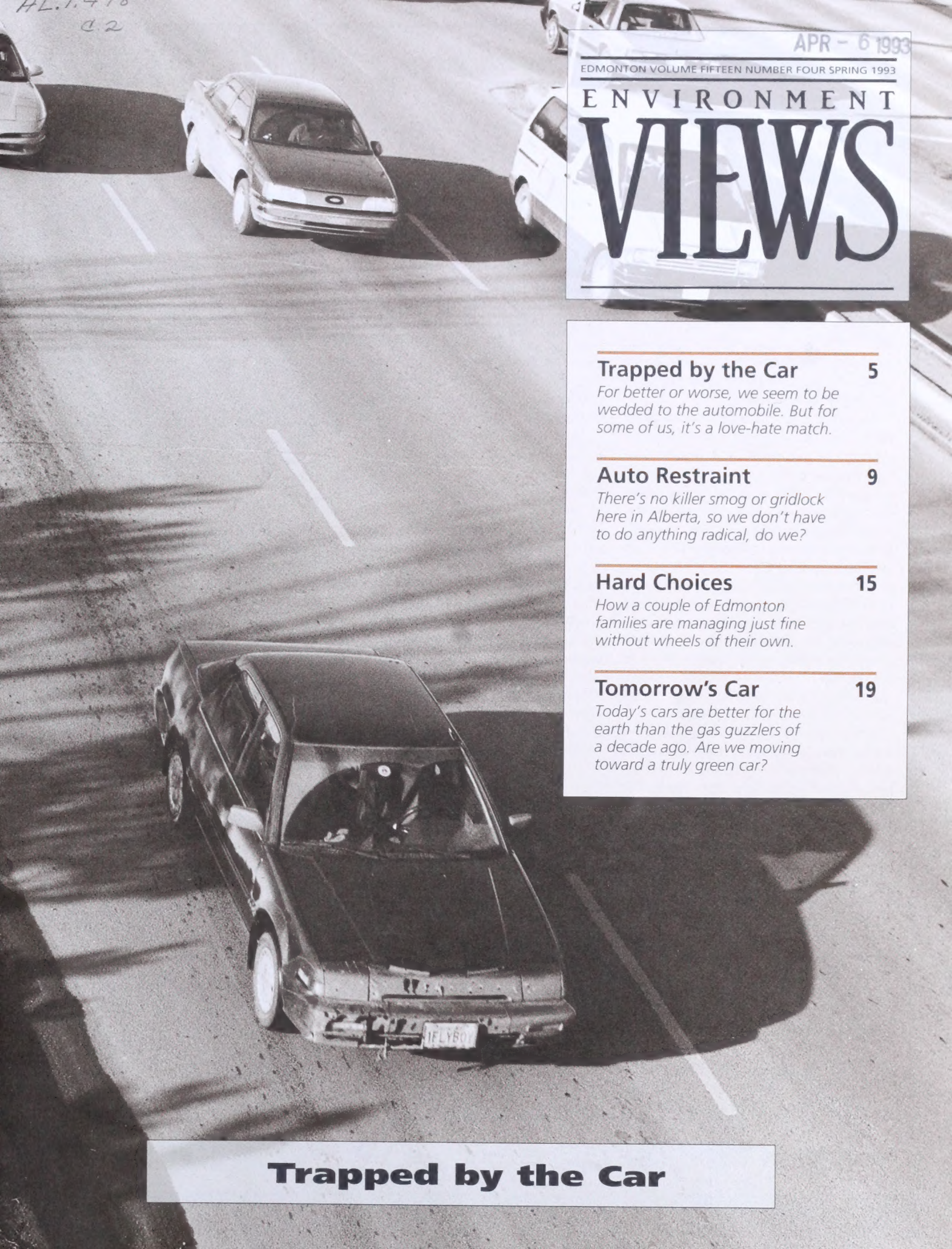
There's no killer smog or gridlock here in Alberta, so we don't have to do anything radical, do we?

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How a couple of Edmonton families are managing just fine without wheels of their own.

Tomorrow's Car 19

Today's cars are better for the earth than the gas guzzlers of a decade ago. Are we moving toward a truly green car?



Trapped by the Car

The Tough-Choice Issue of the 90s.

A year or so ago, I read a letter to the editor somewhere that predicted a future in which our decades of automobile abuse would seem as appalling to the next generation as the clouds of cigarette smoke that filled the 1940s and '50s seem to us today.

How could they live like that? we ask, as we watch some period movie in which everyone seems to be puffing away – including the handsome doctors and nurses on the hospital set. The letter writer predicted that our squandering of unrenovable resources and the creation of dangerous and far-reaching emissions would seem morally repugnant to that future generation, just as blowing smoke into the lungs of babies and other nonsmokers seems to us today. Maybe. I know it is one of the toughest of the tough-choice environment issues of the '90s. I'm with Lynn Zwicky when she writes in this issue about feeling torn between the attractive mobility of driving a car, and not wanting to contribute to the obvious environmental consequences.

In this issue on the environmental impact of the automobile, we talked to several people who have opted in favor of being car-free, and others who drive, but reluctantly. We look at how cars have shaped our lives and our cities. Here in the west, our cities are almost completely the creation of the driving generation, and it shows. They sprawl all over the countryside, wasting an appalling amount of land for wide streets and highways. Houses are on big lots in suburbs offering few services within walking or cycling distance. Densities are so low that public transportation becomes uneconomic.

We look at two broad categories of solu-

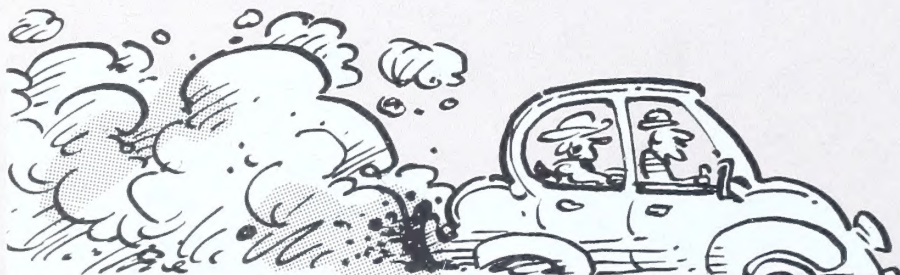
tions to the conundrum: auto restraint and technological solutions. Auto restraint, Glenn Rollans writes, is the term for the collection of strategies that can be used to discourage car use, some falling into the "carrot" category (fast lanes for car poolers, cheap mass transit, attractive and safe walkways and bike paths); others are the "stick" (toll roads, fuel rationing, high parking costs). None is easy, simply because they are politically enormously risky. After all, this is not the Los Angeles basin. Who's going to vote in western Canada for higher taxes to support really convenient bus service, or even safe bike routes?

Then it's obviously time for the green car. Solar collectors on the roof, hydrogen in the tank, the whole thing goes in the Blue Box when you're finished with it, right? Uh, not so fast. While it's true that cars are getting cleaner every year, we can't yet look for factory-made solutions.

Instead, as for so many real-life issues, the solutions are hard, and a little old-fashioned. Drive less; put up with a bit less convenience; invest real money in a less car-dominated future.

THIS IS MY LAST ISSUE as editor of *Environment Views*. It has been an extremely interesting and rewarding 11 years, and never, as they say, a dull moment. Thank you to all of you for your continued interest and support. Researcher Lynn Zwicky will expand her role, and become editor as well, taking up the challenge of doing more with less.

Maryhelen Vicars, the editor of Environment Views, is a professional writer based in Edmonton.



ENVIRONMENT VIEWS

Environment Views is published quarterly by Alberta Environment. Each issue deals with a specific topic from various viewpoints with the aim of increasing awareness of environmental issues among Albertans. *Environment Views* is directed by an independent board with representation from environmental groups, government and industry. The views expressed by the publication are not necessarily those of Alberta Environment.

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Alberta
ENVIRONMENT

Green Clean Home Project in Lethbridge

Forget lingerie, kids' clothing and Tupperware.

Lethbridge residents are planning to hold Green Clean Home parties – to invite friends and neighbors over to learn how to make their homes environmentally friendly and how to take environmentally conscious action.

It's part of the Green Clean Home Project – a unique program that aims to reach 1,000 Lethbridge homes with the Green Clean message over the next two years, says Mike Chirobow, director of the South Country Community Association.

The project came about after an association member gave a collection of eco-friendly cleaning products as a wedding shower gift. "The idea came from the positive reaction she got at the shower," Chirobow says.

The association received a grant of \$20,000 in January from Ecotrust, a Calgary-based foundation. Ecotrust was enthused about the home party idea. "They said 'If Tupperware could do it, why not us?'" Chirobow says.

Public response has been great.

Beginning in March, the program will use 100 homeowners as party hosts. Each host will invite 10 people into his or her home to participate in a three-hour workshop.

The grant pays for a part-time co-ordinator and for training six facilitators, who will teach the workshops. Water and energy conservation, waste management and hazardous products are among the topics to be covered.

The grant also covers the cost of 1,000 starter kits for each host, containing environmentally friendly cleaning products, mesh produce bags, a

canvas grocery bag and an information package.

Participants will be asked to evaluate the workshops and will be encouraged to host a Green Clean workshop of their own.

Greening of U of A

The University of Alberta goes green next fall with six environment courses.

A bachelor of science degree in environmental and conservation sciences will be offered by the still unnamed faculty that resulted from the April 1 merger of Agriculture and Forestry with Home Economics.

Five other degree programs have been revamped to meet environmental, business, social and student needs, says John Kennelly, associate dean of the faculty's academic programs.

The five programs, all offering undergraduate degrees, are: agriculture and food business management; forestry; agriculture; human ecology; and nutrition and food sciences.

The new environmental and conservation sciences program will accommodate 160 students by the third year.

Changes in society, reflected in the environmental concerns now shown in government ecological and wildlife policy, made course changes necessary, Kennelly says.

The U of A courses will combine environmental concerns and policy with scientific principles.

Canada will need an estimated 5,000 to 7,000 graduates by 1995 to fill environmentally linked jobs, so the timing is right for introduction of studies with an environmental focus, he says. A faculty committee spent three years researching and designing the courses, consulting with industry, students, faculty and other universities.

Kennelly says the new programs take into account

that forestry and agriculture must be managed in an environmentally sound way. For instance, the use of natural herbicides and pesticides for agricultural and forestry production will be explored, with the aim of sustaining resources and soils.

Destination Conservation

An Alberta program to cut energy costs in schools and increase environmental and conservation awareness among students and staff is catching on around the province and beyond.

Destination Conservation – developed at the Environmental Resource Centre in Edmonton – is now in place in 22 Alberta school districts. School boards in Ontario and Saskatchewan have adopted the program. New districts in British Columbia, Missouri, New Brunswick, Manitoba, California and the Yukon start in the fall.

"A typical school on the program will save approximately \$2,500 in the first year alone," says Tom Yohemas, curriculum assistant with the program and an Environmental Resource Centre staff member.

"Schools actively participating in the utility conservation projects see a reduction of five to 50 per cent in the consumption of water, natural gas and electricity."

Following the implementation of the Destination Conservation Program, the St. Albert Catholic School District in Alberta reduced utility consumption by the highest percentage of all participating districts.

In 1992 – the second year of the program – the schools achieved reductions of 22 per cent in power use, 10 per cent in natural gas and 27 per cent in water (based on expenditures in the baseline year 1989/1990).

Individual schools in the district achieved between two and 38 per cent savings in year two. The cost savings for year two were \$59,516 for power; \$4,589 for water and \$11,750 for gas.

Environmental Resource Centre executive director Brian Staszewski, who developed the program, says energy conservation has always been a major interest at the centre. The centre started working with the Edmonton Public School Board on energy conservation in the mid-80s.

"The Edmonton Public School Board deserves a lot of credit for this," Staszewski says, referring to the board's support at the pilot stage of the project.

Yohemas says the "most unique aspect of Destination Conservation is that we show staff and students how to save resources and money for their school through a team approach."

"Through active steps with custodians, instructors and students, the school can take local action to solve global problems and curb their consumption of natural resources."

Participating school jurisdictions receive direct program training through inservice sessions. The program provides the framework and support necessary to create an energy- and resource-efficient school district with environmentally aware staff and students.

Over the three years of the program, 10 typical schools will achieve approximately \$100,000 in energy savings.

The school districts turn some or all of the savings over to the schools to use for environmental education and energy conservation activities.

School jurisdictions must adopt an Energy/Resource Conservation Policy and an Energy/Resource Conservation

Payback System. The school establishes education goals to give focus and direction for the students' conservation activities.

A program administrator provides leadership for the schools. Destination Conservation teams in the school are made up of the principal, a custodian, a lead teacher, a student club or class, and a lead parent.

This conservation committee conducts a school energy audit followed by a conservation campaign that reaches the school staff and students as well as the community.

Corporate sponsors are a vital part of Destination Conservation. Sponsors provide the initial funding necessary to implement the program in the schools. This funding covers the cost of program materials and initial inservices. The investment is approximately \$25,000 to implement the program in an average 10-school district.

Corporate sponsorship is "more than handing over money," says Yvonne McNichol, manager of environmental education for Edmonton Power. "We are active participants."

Edmonton Power is corporate sponsor for both Edmonton Public and Edmonton Separate school boards. Edmonton Power attends inservices for new schools and provides materials and information, McNichol says.

The energy saved in participating schools can always be used for the power company's ever-expanding customer base, she says. As well, energy conservation can mean serving more customers with existing facilities – a definite advantage over building new plants.

There's another important aspect to the program, and that's fundraising. The Environmental Resource Centre receives a commission of 10 per cent of all net savings during the first three years of Destination Conservation. If other environmental groups use the

program, the centre collects only two per cent of all net savings.

Conservation Wins Order of the Bighorn Award

The County of Strathcona's Conservation program to enhance and protect wildlife habitat has helped them win an Order of the Bighorn Award.



The award also recognizes the county's initiative in managing the white-tailed deer population through a special deer hunt.

The Order of the Bighorn is given to individuals, organizations or corporations in recognition of outstanding contributions to fish and wildlife conservation in Alberta.

Strathcona County initiated discussions with Alberta Fish and Wildlife in 1983 to solve problems caused by a growing deer population. The special shotgun hunt has been held for eight years and has controlled deer numbers and provided recreational opportunities.

Conservation is a three-year program begun in 1990, after an earlier pilot, and involves individuals in hands-on wildlife habitat enhancement projects. It stems from the county's Outdoor Master Plan, approved in 1988, that identified several environmental concerns, including wildlife habitat.

The program is a co-operative effort of Environment Canada, Alberta Fish and Wildlife, Sherwood Park Fish and Game Association as well as the County of Strathcona.

There are "probably about 750 projects involved, ranging

from nest boxes to nest platforms, all the way up to a restricted covenant," says Carol Smith, Conservation coordinator.

Other projects include:

- duck box distribution
- planting trees and shelterbelts
- seeding upland adjacent to wetlands to provide dense nesting cover
- fencing wetlands to control livestock access to improve shoreline habitat.

Smith says a nest box program is a good starting point for county residents because it can "often spark greater involvement" in ecological causes.

That was Heather Vollmer's experience.

Vollmer put up six nest boxes on her acreage east of Sherwood Park two years ago. She was so excited to see tree swallows nesting – and later mountain blue birds – that she showed friends and neighbors and encouraged them to do likewise. She has since put up duck nest boxes, and has seen 20 to 30 nest boxes go up on neighboring properties.

Vollmer and three other mothers developed a For the Birds program for students at Ardrossan Elementary School. Bird feeders in the school courtyard and a bulletin board display help teach students about birding. Smith and naturalist Myrna Pearman are scheduled to visit in the spring to talk about nest boxes.

Probably about 50 of the Conservation projects involve signed agreements with landowners, Smith says. The others can be "very simple agreements" to maintain the habitat. They vary in terms from five to 30 years.

The Girvan family gave nature a permanent haven at the family farm adjacent to Antler Lake. Locke and Kathy Girvan, and children Clayton and Jenny, set aside seven hectares of shoreline habitat in perpetuity under a common law restrictive covenant agreement. The covenant is attached to the land

title, and runs with the properties, regardless of who purchases the land.

Kathy Girvan says the lengthy process required to bring about the covenant was worth it, and she felt "great" when the agreement was signed.

"You think about it seriously, because you still own the land and still pay taxes on it.

"But you can't do things on it that most people consider land is good for, such as farming and building."

Girvan figures that in time, though, the covenant will enhance the value of the land, when attitudes change and people realize to what extent the earth is in trouble.

She says she and her family always intended to leave the protected land in its natural state. The covenant ensures that it will stay that way.

Neighbor Margo Pybus has signed her 16-hectare property over to Conservation under a 15-year agreement to help wildlife.

The signed contract "puts formally on record what my attitudes toward wildlife are," says Dr. Pybus, a wildlife biologist with Alberta Fish and Wildlife.

That means she will not drain any wetland area. It means she will keep planting flowers and shrubs to attract birds and butterflies. Her long-term goal is to establish a low-maintenance wildflower meadow.

Part of her involvement stems from her work but she also wants to raise public awareness of the importance of maintaining habitat, "of making room, making allowances for other species that we share the land with," she says.

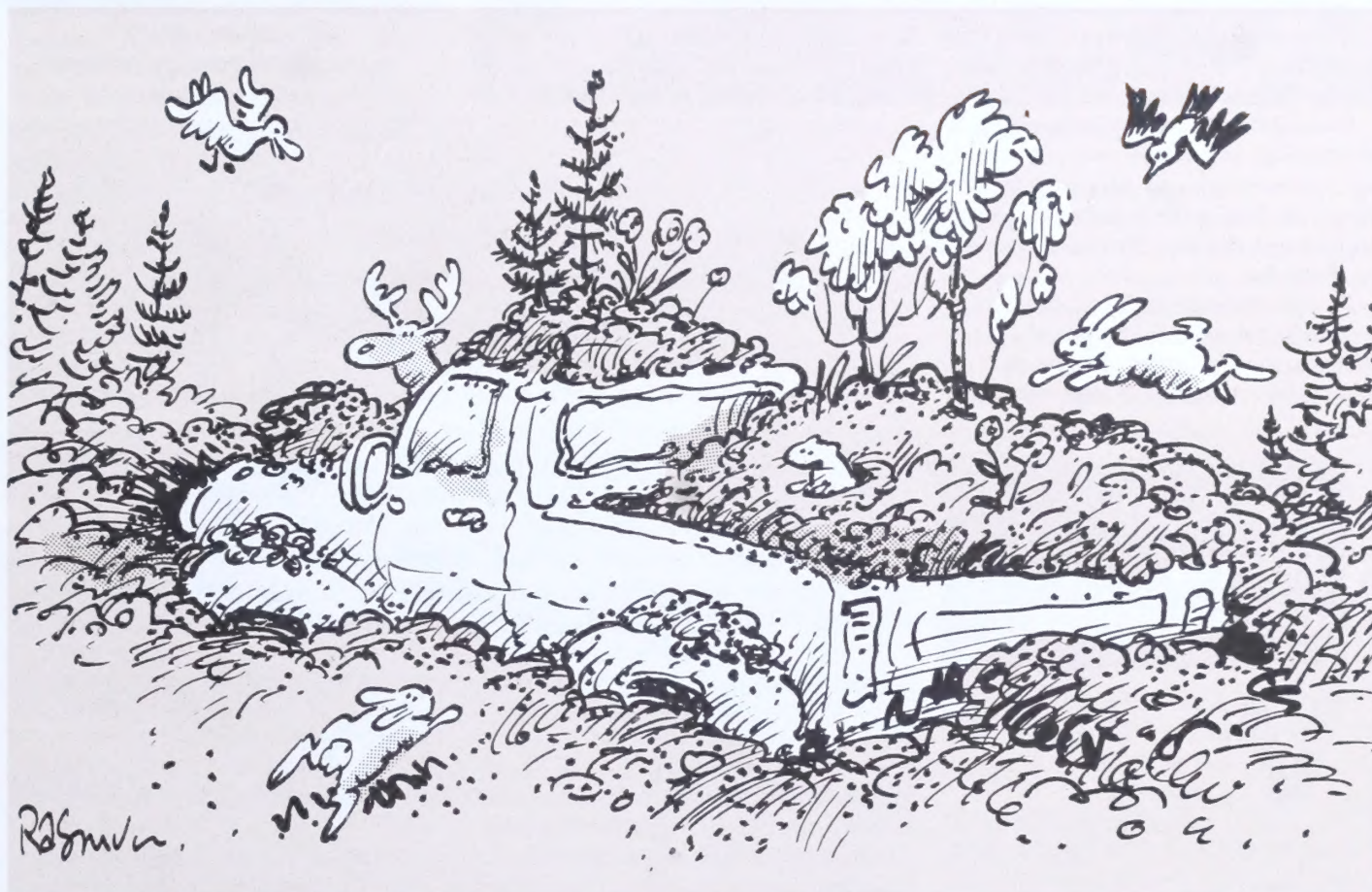
One of the reasons she bought the property was "the opportunity to share land with deer, moose, grouse, coyotes, goldfinches, redpolls and chickadees."

Now there's a sign out by the road that tells passersby that this landowner has given priority to maintaining habitat.

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TRAPPED BY THE CAR

How the Car Has Shaped Our Lives and Our Cities



My family has two cars. My husband uses one to go to meetings; I use the other to run errands with the kids. We park them in the two-car garage right next to our overflowing compost box. Over the year or so it takes to turn my potato peelings into soil, my car dumps three or four tonnes of carbon dioxide into the air. It leaks CFCs from its air-conditioner. It runs on gasoline refined from crude oil, the kind the *Braer* spilled on the south coast of the Shetland Islands last

January on its way to Canada.

I feel like an eco-hypocrite, but I also feel like I need my car. It's my connection to the grocery store, the doctor, the dentist, the bank, the swimming pool and the grandparents, none of which are in my neighborhood.

Even John Bennett, Greenpeace Canada's transportation campaigner, drives a car. "I live in the 20th century like everyone else," he explains.

Greenpeace aired its first anti-car ad last February. It's a 30-second spot. First we see

the headlights of a car. The camera pans back, and the headlights fall into perspective – they are part of the face of a dinosaur and the dinosaur's body is a junk heap of cars. The dinosaur stands up, moves a little, coughs and collapses. The image cuts to a street filled with people. No cars in sight. A voice says there will be a car-free future.

But there is no car-free present. "We're not saying to people you have to give up your car right now," says Bennett. The purpose of the ad is to make people think and to realize the

need for alternatives. "Most people in Canada and North America don't have alternatives because our society has skewed its planning, given everything up to the car."

Suburban Prisoners

The car gave us the suburb and the suburb gave us back the car. Now we spend up to two years of our lives, Bennett says, just driving to work.

"In many new neighborhoods, if it's a one-car family, the dad goes to work, the mom is isolated," says Dan Jenkins of Jenkins and Sturgess Architects in Calgary. Jenkins is experimenting with new suburban models that look a lot like the old small town. "Certainly teenagers are isolated, little kids are isolated. The only way to get around is by car and they rely on their parents to drive them everywhere. That's not healthy. It's created prisoners in our suburbs."

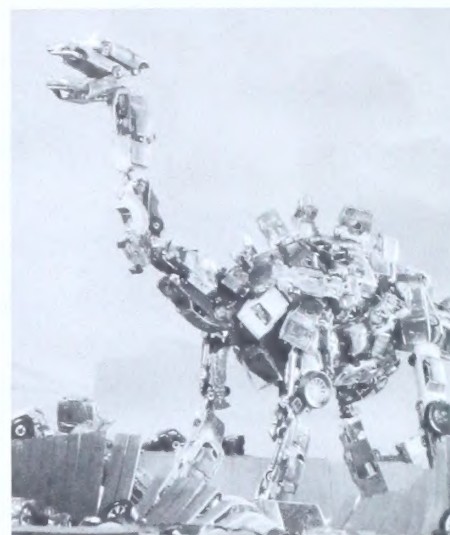
It was all done with the best of intentions. In the twenties, at the dawn of the automobile age, planners saw cars as a way to move people out from under the grime of industry; to put some distance between houses and smokestacks.

That was the beginning of the 20th-century preoccupation with segregated land-use zoning, according to Jenkins. The car blew our cities apart into residential fragments, indus-

trial fragments and business fragments. The compact jumble of the cities of our grandparents gave way to urban sprawl.

Jenkins is trying to bring the fragments back together in Westridge, a new subdivision in Okotoks, south of Calgary. One of the keys, he says, is to put services back into neighborhoods. The typical suburb, says Jenkins, is a "single-family enclave with a strip shopping centre over here, and a church over there with a big parking lot around it, and a school over here with a big parking lot around it, and a professional building down there with a big parking lot around it."

"When you think about it, our suburbs have all the things you would typically find in a small town, it's just that they're all spread out with big parking lots around them. What we need to do is consolidate all those kinds of uses like retail, offices, churches, schools, and create a heart for each of these new areas — a



GREENPEACE CANADA

Greenpeace Canada's anti-car TV commercial features a junk-car dinosaur.

"Most people in Canada and North America don't have alternatives because our society has skewed its planning, given everything up to the car."

Facts and Figures on Car Emissions

Vehicle exhaust is the prime source of air pollution in cities. In Alberta, cars are responsible for:

- **Carbon monoxide.** Almost all CO comes from vehicles. CO can affect motor and mental functions "at levels sometimes found in polluted city air" according to the 1990 federal report, *The State of Canada's Environment*. Last year, the eight-hour standard for CO (five parts per million) was violated 20 times in downtown Calgary and 12 times in northwest Edmonton. The one-hour standard (13 parts per million) was violated 12 times in Calgary and five times in northwest Edmonton.

- **Nitrogen dioxide.** Twenty-nine per cent of NO₂ in Alberta comes from trans-

portation. NO₂ is a respiratory irritant that is linked, with other irritants such as particulates, to asthma and bronchitis.

- **Particulates.** Cars are the primary source of dust in the air in downtown Edmonton and Calgary. Particles of dust are irritating to the lungs and can carry toxic substances. There were six violations of the 24-hour standard in Alberta last year; four were in Edmonton.

- **Volatile organic compounds.** In car exhaust, VOCs come from the incomplete combustion of fossil fuels. Together with nitrogen oxides, they are part of the chemical soup that reacts in sunlight to produce smog. Smog is mostly ozone. According to *The State of Canada's Environment*, "cars are important sources of NO_x and VOCs" and are a "prime target" when trying to reduce ozone concentrations in cities. Alberta seems to buck the trend: its ozone concentrations are highest in rural areas and lowest in cities. Randy Angle, with the Atmospheric Division of Alberta Environmental Protection says the reason is probably some combination of high natu-

ral background levels of ozone (typical for our latitude), colder temperatures and less sunlight than typical cities with smog problems. In Alberta conditions, the nitric oxide (NO) in vehicle exhaust seems to help break down ozone.

Car exhaust also contains carbon dioxide. CO₂ is a greenhouse gas. The greenhouse effect is causing the temperature of the earth to rise and will lead to enormous shifts in the ecology of the planet. Globally, cars account for 13 to 15 per cent of total CO₂ emissions. They make up about 10 per cent of Canada's total CO₂ emissions and about eight per cent of Alberta's.

Emissions per vehicle are getting smaller, but total emissions from vehicles are going up. This is because the number of vehicles on the road is growing rapidly, especially in developing countries. Globally, car ownership is growing faster than the population. A recent UN study calls it the "car explosion" and says it vies with the population explosion as the major source of environmental disruption.

core, a village centre."

The other key to reintegrating the city is to reclaim the street as a place for people, not cars. The car changed our relationship to the street. Streets used to be places where people congregated and did business. Now they are just car conduits – wide, ugly and serviceable – places to drive through on your way to a parking lot.

This happened partly by accident. As the suburbs developed early in the century, commercial strips developed along the major connecting roadways. Soon, cars and commerce went together – cars, commerce, noise, grime – no place for a stroll.

But we also thought our way out of congenial streets. Jenkins says the street really died in the 1930s, in a suburb of New York called Radburne. Radburne was designed "for the age of the motor car." It was supposed to be an escape from the city, a place where you could open your front door and see nature, green and glorious. The houses fronted onto common green areas, and they backed onto little cul-de-sacs surrounded by garages. The design principle was that people and cars don't mix. People were supposed to use the green spaces, cars were supposed to lurk in the cul-de-sacs, funnel onto collector roads and quit ruining the scenery.

"It was a very destructive idea," says Jenkins. "It created the concept of the street as a negative place." And the streets were negative places in Radburne. They were noisy,



Lynn Zwicky and kids – car captives.

congested, dangerous nuisances. "It became a self-fulfilling prophecy."

Radburne was a turning point in urban design, says Jenkins. We gave up on the street after that and let it be ugly and uninviting. We have changed the Radburne model, though. In our new subdivisions, the houses now face the cul-de-sac. The Radburne experience was that people used their back doors like front doors because that's where the action was. But we've made no effort to bring life back to the street.

It's still just a place for cars.

The modern cul-de-sac is an ocean of concrete surrounded by a wall of two-car garages. It's part of a maze of winding collector roads that discourages walking. "There are many places where you can virtually live a hundred feet away from someone but you might have to walk or drive half a mile to get to them because you're on a cul-de-sac and they're on another one. The only way to get to them is to go this circuitous route onto a collector road and back."

In Jenkins' ideal neighborhood, all the essential services are a few minutes away on foot and the walk is pleasant. The streets have boulevards and trees. They are laid out in a grid so that traffic is spread out across a matrix of streets and not fuming up collector roads. People can get around without their cars.

Hooked

People may drive less in Dan Jenkins' suburb, but there will still be plenty of garages – less conspicuous but no less full. Jenkins doesn't deny that cars are a fact of life.

Just look at the numbers. In Edmonton and Calgary, about 87 per cent of new residential construction in 1990 was single-family homes. That compares with an average of 43 per cent across the 25 largest cities in Canada. Of 2.5 million Canadians, 1.9 million have driver's licences. It looks like we still want the suburbs and we still want a car in every garage.

Dennis DesRosiers studies people's attitudes toward cars. He is president of DesRosiers Automotive Consultants in Toronto, an independent auto analyst to the ma-

Automobile Statistics

Percentage of average Canadian household energy demand used to drive a car: **39.**

Percentage of average Canadian household energy demand used to heat a home: **42.1.**

Percentage of trips to work taken in a car: **69.2** (Calgary)², **75.9**, (Edmonton).³

Average vehicle occupancy: **1.13** (Calgary)², **1.08** (Edmonton).³

Average distance of a car trip to work: **10.6 kilometres** (Calgary)², **11 kilometres** (Edmonton).³

Average time to complete: **18 minutes** (Calgary).²

Average distance of a bike trip to work in Calgary: **9.8 kilometres.**

Average time to complete: **27 minutes.**⁴

Percentage of households in Edmonton without bicycles: **45.**

Percentage without cars: **13.**³

Percentage of Calgary households with two or more cars in 1971: **31.**

Percentage of Calgary households with two or more cars in 1991: **57.**²

The two biggest reasons for not riding a bike to work in Calgary: **Weather and dangerous traffic.**⁴

¹ The State of Canada's Environment 1991: Environment Canada.

² 1991 statistics, Transportation Planning, City of Calgary

³ City of Edmonton 1989 Travel Survey

⁴ 1991 City of Calgary Cycling Survey



Dan Jenkins

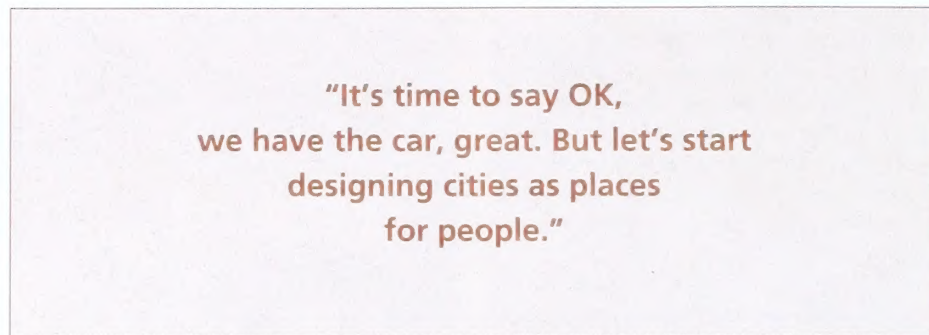
for car manufacturers in Canada. "It's here for good – it's a case of what product you'll be owning rather than whether you will own or not."

DesRosiers says the car provides a lot of personal freedom. That's the clincher for me. We get a twisted image of that freedom, of course, from the ads. They show sleek cars humming down empty highways or parked in the centre of a crowd of people having some sort of interesting social interaction. We don't see the gridlock, and we don't see the car full of whining children, except maybe in the headache commercials.

My car does give me the choice of driving my kids across town to a day care I like rather than settle for the second-best one in my neighborhood. (Was that good or bad? If I had stayed at my neighborhood day care, only a block away, maybe I would have worked to make it a better place.)

Driving a car is also a question of image, says DesRosiers. "A car is a statement: 'I have a vehicle. That means I have a job, I am important, I have freedom, I have made it to some extent. I am a significant person.'

"We have a saying in the auto industry: you are what you drive. All of your lifestyle is embodied in your vehicle." DesRosiers says Canadians are less preoccupied with image than Americans. If we are what we drive, then we're Tempos and Chevettes. "Canadians have less of a love affair with their vehicles than you find in the United States. The more of a love affair, the more of a sex object you make of your vehicle, the more vehicle and the more upscale you go." Two-thirds of the Canadian



A home in the new subdivision of Westridge in Okotoks – a new suburban model that looks like the old small town.

car market is mid-size or smaller, says DesRosiers. "It's the exact opposite in the States: roughly two-thirds of their market is mid-size and bigger."

DesRosiers says Canadians are more concerned with basic transportation – primarily to get to the job. "If you have a job, there's a good chance you have a car. Simple as that. You have to get back and forth to work, number one. Number two, you want to do that efficiently because a job takes away from your available leisure hours." A car gets you door-to-door fastest.

The Environmental Price Tag

Basic transportation or not, every car has a tail pipe. "Do we have the right, for a little bit of our own pleasure and convenience in the present, to inflict huge ecological disasters on our children and our grandchildren?" asks Bennett. Well, no. And what we have to do, he says, is make intelligent choices. "It's very easy to say everyone will get a car and we'll

provide them roads. That's easier than making sure our cities have integrated designs so that you don't necessarily have to drive half-way across the city to live in a nice place and have a decent job."

Jenkins agrees. He notes that 23 per cent of Canadians now work at home. "If you have a facsimile machine, a computer and a modem, you're connected." Information technologies are changing the work place. "I think those changes are reinforcing the idea that people can again work in their community and walk to work. The kids can drop in after school and say 'hi dad' and actually know what their dads do."

"It's time to say OK, we have the car, great. But let's start designing cities as places for people."

Lynn Zwicky is the researcher for Environment Views.

AUTO RESTRAINT

We're Not Trying Very Hard Yet



"The last thing the world needs is another car," goes a current Nissan commercial on television, "so we built one."

Truth in advertising. The world doesn't need more cars, but every year 10 million more hit the road, according to the 1992 United Nations report, *The World Environment 1972-92*. The global vehicle fleet is growing faster than world population.

Albertans drive over 130,000 more vehi-

cles now than we did five years ago. We feel the consequence when a temperature inversion traps us in a bubble of our own exhaust, or when we're trapped in traffic.

While individual Albertans may be trying to drive less, as a province, we're not trying at all.

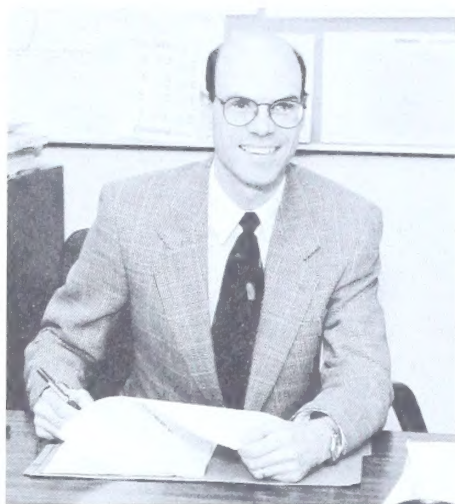
Ants and Grasshoppers

David Watson in Calgary and Hassan Shaheen in Edmonton head up their cities' transportation strategy reviews. While both men will

listen carefully to what their communities tell them, neither has a mandate to reduce automobile use in Alberta's two major cities.

"The city of Calgary's transportation strategy is a balanced strategy where we try to recognize there is more than one way people get around," says David Watson. "Having said that, we're a car-oriented western North American city."

"We don't want to pressure the public," says Hassan Shaheen, senior systems planning engineer with Edmonton



Hassan Shaheen

Transportation. "Whether we'll be a leader or not is a question of the degree of risk politicians are willing to take."

Phil Elder, a professor in the Faculty of Environmental Design at the University of Calgary, describes himself as a "concerned layman" when it comes to transportation issues.

Concerned lay people have a lot more latitude than planners when it comes to expressing an opinion. "In 40 or 50 years, our children will curse the group of people who set up this irrational, unsustainable transportation system," says Elder.

Yet Elder praises David Watson and the Calgary GoPlan exercise. "If the transportation plan does not recommend restraining auto use, it won't be for lack of consultation,"

says Elder. "I don't think when David Watson says he has no mandate to reduce automobile use that he's abdicating his responsibility. When the public gives city council a mixed message, it's council's responsibility to decide their long-term best interest."

The Stick

Many cities around the world have acted to restrain automobile use, typically when air quality, traffic congestion or fuel availability reach crisis levels.

Peter Heppleston, a transportation planning manager with the City of Edmonton, cites "the very notable failed attempt in Nottingham," England, where city managers instituted a "ring and collar" system to restrict automobile traffic in an old city centre never

How to Park Your Car and Other Useful Lessons From at Home and Abroad

Here are a few experiments in auto restraint to muse on the next time you're stuck in traffic.

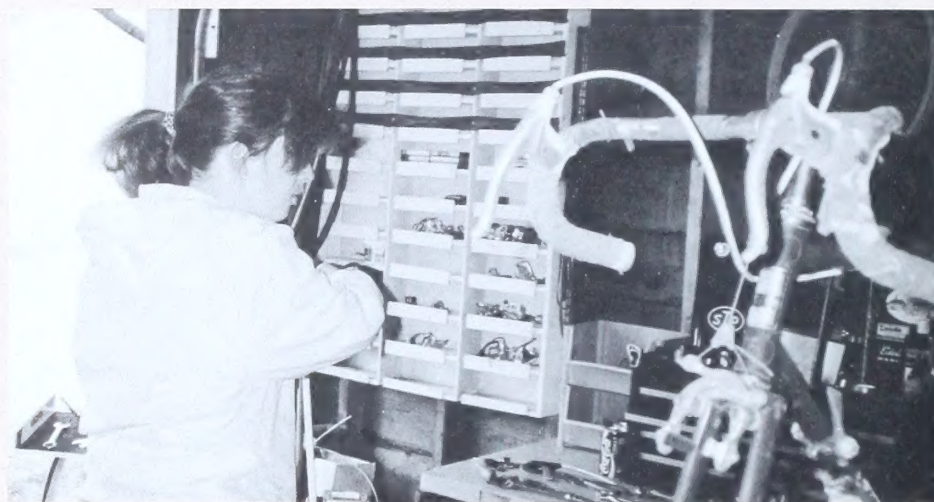
Have White Bike, Will Travel

If you're in Jasper this summer, jump on a white bike and go for a joy ride.

The Jasper White Bike Foundation has a fleet of about 80 bikes for the public to use free of charge. "We want to reduce dependency on the automobile," says foundation member Scott Hack.

"The bikes are out from when the snow leaves to when the snow flies – late April to early November," says Hack. "We put them out and after that we're very hard pressed to find them. We see people riding them all the time."

The foundation put its first white bikes on the road in the summer of 1991. People in town donated most of them. A \$3,500 grant from Shell Canada's Environment Fund bought tools, parts and shop rental. Volunteers like Hack stripped the bikes down – most were ten-speeds – to single-speed beauties and painted them white. Hack estimates each bike cost about \$300 to overhaul.



Volunteers at the Jasper White Bike Foundation overhaul donated bikes that become one-speed white beauties available for the public to use free of charge.

There have been a few hitches. About 20 bikes are still missing from last summer and the joy rides sometimes got a little rough. Hack says the foundation plans to run ads in the local paper to make people aware of the service and this, he hopes, will increase respect for the bikes.

Bikes deserve respect in Hack's opinion. Cars are bad for the environment and biking is good for your health. There is not a lot of need for driving a car around a small town like Jasper, anyway, he says.

Maybe not in a big town either. Copenhagen started a free bike program last spring, according to a 1992 resource book published by Canada's National Round Table on Environment and Economy. For about \$3.50 Canadian, you can rent a City Bike from a special coin-operated rack and return it to any other

rack for a full refund.

A cheap way to make off with a perfectly good (and no doubt perfectly identifiable) bike? Maybe. Call me a miser, but I always take my Superstore shopping cart back for the quarter.

Rack 'Em Up

Every bus in Phoenix, Arizona has two bike racks. For no extra fare, you can ride your bike to any bus stop on any route and then bus your bike.

The idea for Bikes on Buses came from a "Futures Forum," a group of citizens interested in planning the future face of Phoenix. "A lot of motivation was public concern for the environment," says Mike Nevarez, project manager for Bikes on Buses.

Two years ago, a national biking magazine

meant to accommodate cars. The goal was to collect a toll from vehicles entering the city centre in such a way that high-occupancy vehicles were served first and fastest. Drivers alone in their cars were meant to become so irritated that they would choose some other way of going downtown; instead, they were so irritated they threatened to choose new councillors. The ring and collar came down.

Transportation planners and analysts categorize Nottingham's experiment as an example of "congestion pricing." Make the worst-clogged roads – typically those in the city centre – more expensive to drive on in private cars, and people travelling them will

David Watson (far left) in discussion at Calgary GoPlan's recent Futures Fair.



profiled Phoenix as a bike-unfriendly city, says Nevarez. The city is now trying to turn that around with better facilities for bikes generally, such as designated bike lanes and bike paths. Bikes on Buses is part of the overall strategy.

Bikes on Buses does not have a big impact on transit ridership, says Nevarez. Cyclists count for about 600 boardings a day out of a total 130,000 systemwide. But the philosophy behind the program is that more people will leave their cars at home if they have more options for getting around.

"We as an agency are concerned about the environment and increasing access to alternatives to the car," says Nevarez.

Free Riders

There were 15 months in Austin, Texas when you didn't have to pay a cent to ride a bus.

"The reason for the free fare program was marketing," says Howard Goldman, director of communications for the Capital Metropolitan Transportation Authority.

The free fare program began in October 1989. Ridership jumped 72 per cent the first quarter. By the end of the experiment in December 1990, it had levelled off at 80 per cent above pre-program levels.

The authority reinstated fares in January 1991 at half the former price for passes and tickets. The authority does not need to charge to operate Austin's transit system because it is funded through a one-cent sales tax. But Goldman says taxpayers want transit users to mostly pay their own way. Ridership dropped when fares came back, but remained dramatically higher than before free fares. By January 1993, ridership had nearly returned to its

free fare high.

Goldman says ridership is up for a number of reasons – population growth, a healthy local economy, improvements in transit service and access. The free fare program made its contribution too. "It was an opportunity for people to use the system who would not have otherwise. It generated a lot of publicity and generally increased community awareness of the system and the benefits of using public transit."

Cuban Revolution

If you want to get people out of their cars, try telling them there's no more gas.

It worked in Cuba. When the Soviet Union disintegrated, so did half of Cuba's oil supply. Two years and over a million Chinese bikes later, Cubans are pedalling past a fearsome crunch on petroleum-dependent transportation.

Tooker Gomberg, bicycle advocate and Edmonton alderman, has seen the results first hand. He says in Havana, 12 bicycle planners

are clearing the road to accommodate the city's 400,000 new bikes. Havana now has bicycle lanes on every major road, streets closed to cars, reduced speed limits for cars and new bicycle parking bylaws. Special bike buses and bike trucks shuttle cyclists under Havana Bay. Sixty thousand imported tri-cycles will be the city's new taxi and cargo fleet.

Says Gomberg: "The story of Cuba's transportation transformation suggests that maybe, just maybe, when we recognize the ecological crisis we will be able to react in a similar dramatic and positive fashion.

"The lesson to be learned from Cuba is that solving environmental problems will not take more technology, but vision and commitment. True, it never snows in Havana, but even so we could raise the number of bicycle trips in Edmonton from the current one per cent to 15 or 30 per cent without much difficulty."

Lynn Zwicky



Donated bikes in various stages of assembly at the Jasper White Bike Foundation.

choose to walk, cycle or use public transit.

Where Nottingham failed, other cities have succeeded. "Singapore is a world leader in congestion pricing," says Heppleston. Since 1975, drivers have paid extra to drive into the city centre, allowing traffic planners to reduce demand for roads rather than always trying to increase supply. Downtown congestion has eased, but, as Hassan Shaheen points out, the strategy has created a traffic and parking crisis around the perimeter of the city centre. People drive as close as they can without paying extra, then park their cars.

The complications in Singapore's experience have not outweighed the benefits, however, so other cities continue to try congestion pricing. Since February 1990, for example, drivers in Oslo, Norway have paid about \$2 per trip or \$400 per year to drive in the city centre.

Other cities have chosen parking as the



Phil Elder (second from left) sat on a panel of experts at the GoPlan Futures Fair.

**Drivers in Oslo, Norway pay \$2
per trip to drive in the city centre.**

**Mexico City and Santiago ban one-fifth of all
vehicles from every city road each weekday.**

Geneva bans all employee parking.

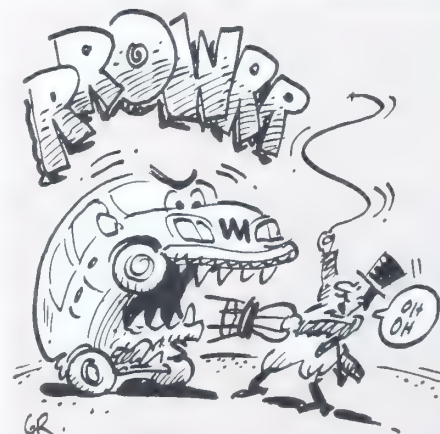
Copenhagen bans parking in the city centre.

easiest place to hit downtown drivers in their pocketbooks. Ottawa's federal civil servants lost their free parking in 1975, for example, and began paying 70 per cent of the market rate. The numbers of those who chose to drive to work fell by 23 per cent, and 16 per cent more than before chose to ride public transit.

Some cities have devised auto-restraint strategies for their inner cores that don't involve fees from individual drivers. In *Toward Sustainable Communities*, published in 1992 by Canada's National Round Table on the Environment and the Economy, Mark Roseland notes that a suburb of Washington D.C., a suburb of Seattle and more than 30 communities in California have passed ordinances requiring employers, under threat of fines, to encourage their employees to use public transit. Vancouver has considered a similar by-law.

Mexico City and Santiago, Chile, ban one-fifth of all vehicles from every city road each weekday, based on their licence plates. According to Marcia D. Lowe in *Alternatives to*

the Automobile, a 1990 Worldwatch Institute report, Geneva prohibits parking private cars at workplaces altogether, and Copenhagen has eliminated all parking on the streets of the city centre. Until the Italian government ruled the strategy illegal in 1992, Rome and 10 other Italian cities used licence numbers to



restrict all cars to driving on alternate days during periods of poor air quality.

The Whip and Chair

Many cities have tried to tame cars rather than get them off the roads altogether.

Several cities in the Netherlands, including Delft and Groningen, apply the *woonerf*, or "living yard" approach to many of their roads. They use trees and other landscaping features in the midst of roadways to complicate the flow of traffic. Cars can drive through the *woonerf*, but they're the outsiders; pedestrians and bicycles own the road. The approach works best when widely applied, so that traffic doesn't concentrate on remaining throughways. In Maastricht, roughly 30 per cent of the roads have been given over to *woonerf*.

Beginning in German residential areas in the '70s, *Verkehrsberuhigung*, or "traffic calming," has spread throughout whole cities and around the world. The German model takes a community-based approach to making streets attractive public places for people to walk, cycle and drive. *Verkehrsberuhigung* leaves room for cars, but makes their drivers stop and smell the roses.

The Carrot

At the opposite end of the spectrum from these disincentives for driving private cars lie a wide variety of incentives for using public transit and bicycles. Both Edmonton's policy of allowing cyclists to bring their bicycles onto the LRT during off-peak hours, and Calgary's business-supported policy of free travel on the downtown C-train, encourage

Because our cities still have
few problems compared to the world's great
metropolises, the planners believe we, as a community,
are not ready to apply other cities'
solutions here.

people to leave their cars at home, without ever saying so in so many words.

Bringing It All Back Home

Alberta's transportation planners have all the background on auto restraint measures in other cities around the world. But because our cities still have few problems compared to the world's great metropolises, the planners believe we, as a community, are not ready to apply other cities' solutions here.

Alberta's major cities still enjoy relatively clean air most days of the year. "Never has anybody ever complained to me about air quality," says Hassan Shaheen. "Unless people perceive that air quality and the environment aren't excellent, it's very difficult to get them to agree to make changes."

Albertans read about gridlock, but we never see the real thing from the driver's seat. "Major cities are in a different league from Edmonton. You're talking a totally different

scale," says Shaheen. "In absolute terms, we don't have a traffic problem."

Shaheen puts Edmonton's approach to auto restraint into a few words: "Restraint is passive in the sense that we haven't chosen to build new bridges." Peter Heppleston adds that Edmonton has "no active auto restraint anywhere."

Dennis Danchuk, Calgary's manager of traffic operations, presides over several traffic calming initiatives, including "speed humps," gradual "waves" in the pavement that make drivers long for dry land. But, he says, Calgary "has not had great experience" even with North American commonplaces such as car-pool lanes and bus-only lanes. While the reserved lanes sat more or less empty, Calgary drivers stuck to their private cars in lanes that were now more congested than ever. No reserved lanes remain.

Having said that Calgary already has a balanced transportation strategy, David



Peter Heppleston

Another Way to Keep the Car in the Garage

The Energy Efficiency Branch of Alberta Energy in Edmonton had a '90s kind of answer for a technical research officer stuck in an overcrowded work space who wanted to spend more time at home. The answer was, "Go ahead."

Brian Weir, the branch's programs manager, says everyone's biggest concern with the telecommuting experiment was communications, so the branch added a private line to the employee's house and installed a phone/fax machine that lets her talk with the office or share hard copies of documents. When she isn't talking or faxing, the employee can join the office's computer network by modem.

She works flexible hours, while a background program on her computer tracks both her time per task and her total hours worked. And she still spends at least one day a week in the office. Both she and her supervisor feel her efficiency has gone up since she started taking her work home.

But, since this is the Energy Efficiency Branch, that's not where the story ends. By their calculations, the employee worked 75 days at home between the middle of March and the middle of September 1992. Because she drives a small Volkswagen diesel, savings were modest: 139 litres of diesel, \$65 and 312 kilograms of avoided carbon dioxide emissions. If she drove a typical gas-fuelled car, the comparable savings would have been 228 litres of gasoline, \$109 and 538 kilograms CO₂.

"The effect of one person is not really significant," says Weir, "but in numbers, you'd save big. For her particular job and particular situation it's a big success."

Watson, steward of Calgary's GoPlan, looks forward to the state of the city when the plan is completed in 1995. "We'll have a balanced transportation system," he says. He doesn't miss the irony, but says that when you're steering a city, changing its direction is harder than changing direction on an oil tanker.

Watson calls Calgary "a low-density, sprawled-out metropolitan city" where revenues from public transit can't keep up with expenses. The LRT is above ground, but its finances are not.

Hand in Hand

The shape of Alberta's cities goes hand in hand with our love affair with cars. Edmonton and Calgary invented themselves during the age of the automobile. Instead of having to make cars fit the cities, we've made our cities fit cars.

"How can we blame people for holding on to their cars when they're the only way to get around the cities that we've built?" asks Phil Elder, who sat on a panel of experts in Calgary's



Young Calgarians survey a model of a proposed transportation strategy at Calgary GoPlan's Futures Fair.

"How can we blame people for holding on to their cars when they're the only way to get around the cities that we've built?"

recent transportation "Futures Fair," an event sponsored by the GoPlan. "Auto restraint is a non-starter without land-use planning and better transit," says Elder. "Transportation and land-use planning should be part of the same city department."

Higher density cities, argues Elder, save land, allow more efficient transportation and bring people closer together in spirit as well as body. He cites a sabbatical in Edinburgh, Scotland as his transportation epiphany. "We could walk to every known good and service and several excellent museums in 15 or 20 minutes." Edinburgh's streets, he says, offered "walkability, accessibility and neighborliness." Elder admits that Edinburgh's model doesn't apply directly to winter cities. But, he says, "there are dense northern cities in Europe that work OK."

In Calgary, says Elder, "the easiest thing for a developer to do is to build low-density housing on bare land where only gophers live. They don't vote." But, he says, "the easiest

path is not sustainable." When developers propose adding higher density housing to low-density neighborhoods, residents complain. They want to preserve the elbow room they paid for. Perhaps, he suggests, cities should demand that new subdivisions start with high-density housing.

Self-Control

Edmonton's most prominent transportation activist, alderman Tooker Gomberg, came to city council by way of the EcoCity Society and the Edmonton Bicycle Commuters Association. "If you're talking about auto restraint," says Gomberg, "people will say 'No.' If you ask whether people want to improve their quality of life, you'll get a different answer." Gomberg believes that regulators are right to focus on making the alternatives to private cars more attractive, rather than on trying to annoy drivers.

But he also thinks drivers should already be annoyed by the costs of driving. "I feel that

we're really addicted here, and when you're addicted you don't want to hear the truth," he adds. Economic arguments, he suggests, will convince private car addicts where environmental and lifestyle arguments have failed.

"Here in Edmonton, [auto restraint] will start to happen when we get a handle on the true costs of the car," Gomberg says that, according to the last statistics he's heard, drivers of private cars now benefit from hidden subsidies in the order of \$3,000 per car per year for road capacity, health care and assistance to the automobile and petroleum industries. Police spend as much as half their time dealing with cars. In his new role as a watchdog on the city's budget, Gomberg also notes that when the city makes commuting from surrounding towns easier, it robs its own tax base.

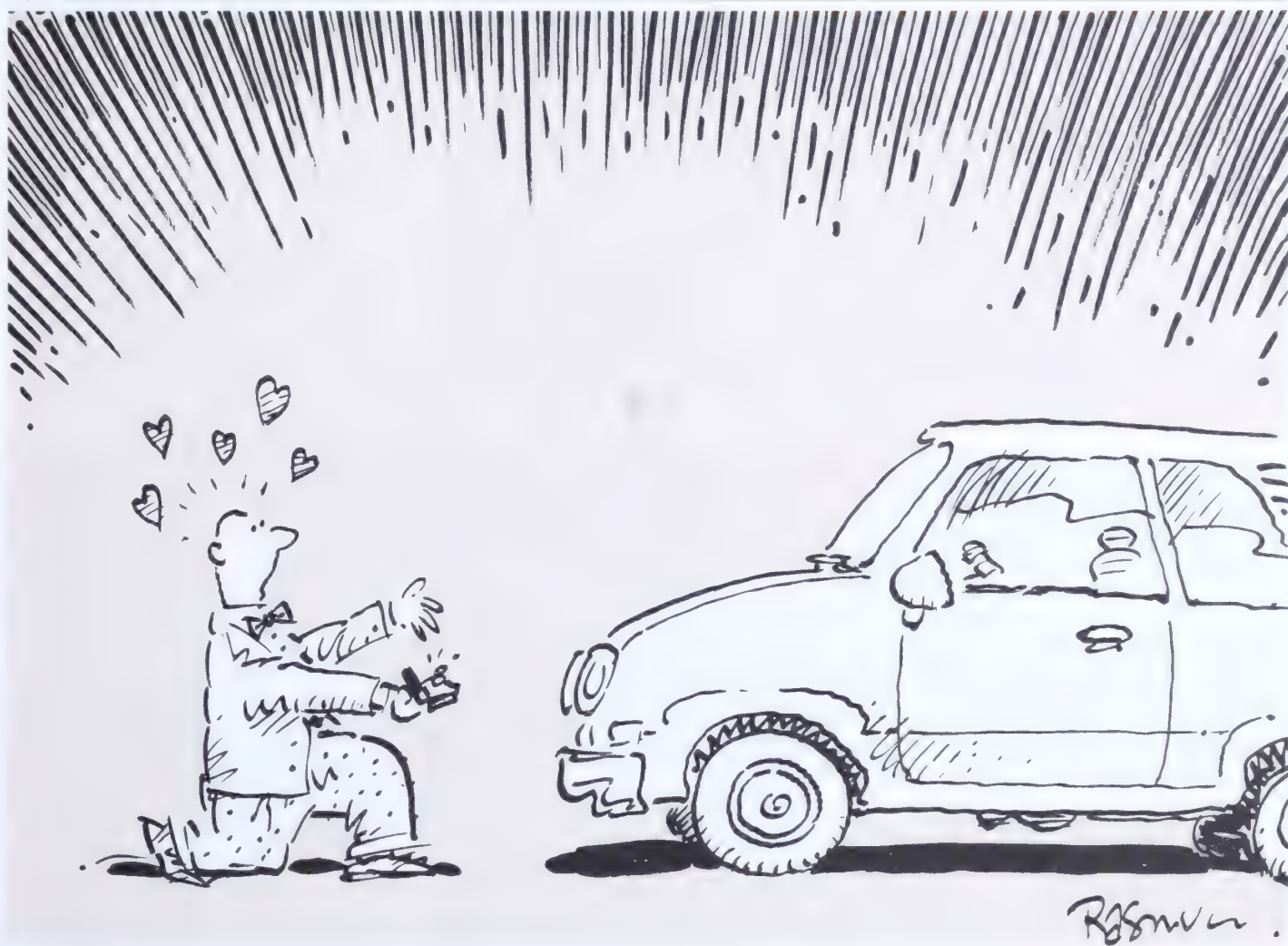
When Cuba lost its Soviet oil supply two years ago, it went beyond auto restraint to virtual auto extinction. Hassan Shaheen says we have the same capacity: "If we were forced to adapt, we'd adapt."

But we may not need a full-blown crisis before we park our cars. Both David Watson and Tooker Gomberg choose the same words when predicting the future. Gomberg: "I don't believe we'll come up with one big solution. We'll come up with a thousand little solutions." Watson: "It'll be the solution of a thousand cuts."

Glenn Rollans is an Edmonton writer and editor.

HARD CHOICES

How Can You Live Without a Car?



Driving a car is easy. At least in the sense that we get into the habit of it even before we learn to do it. Most of us don't think about whether we should have a car and we may not seriously consider the real effects our choice can have on our potential to enjoy our lives.

We talked to three households who have given the question of car ownership and use an unusual amount of thought. The choices

they have made have been quite different, but even though environmental concerns figured strongly in the reasoning of each household, the real issue, we found, was quality of life. The following are some very personal thoughts on life with and without a car.

A couple of subway tokens in the pocket of a 10-year-old boy can mean freedom, adventure and, perhaps, mischief. When I was a kid, I felt like the Toronto Transit Commission

had given me the keys to the city at a dollar for seven rides.

These feelings returned with the slightly acrid ozone smell of the subway when I took my sons for their first ride last month. As they kneeled on the front seat, watching the rails flash and the signals change, they could see the possibilities. They understood why I stopped at the ticket booth to get a TTC route map for Peter Marriott, a six-year-old

Edmontonian who collects transit maps and bus schedules from all over North America.

Circle Tours

Peter pores over the Edmonton route map, trying to find ways to make connections around the city, planning circle tours his family might take some Sunday. For, by choice, Peter, his



Peter and Bonnie Marriott with Peter's collection of transit maps and schedules.

three brothers and sisters, and his mom and dad have no car in a city dominated by the private automobile.

"A big part of our decision not to have a car is to have a more simple life style," says Bonnie Marriott, Peter's mom. "A car is a lot of trouble – especially with children – when you just have to go two blocks."

For the Marriotts, the way they live governed their choice of where to live. They chose a house close to a major bus route, close to schools and playgrounds, where Peter and the other kids could walk to soccer and choir and dance lessons.

Bonnie credits their carless way of life with allowing her the financial freedom to stay at home to care for the children and the household. The Marriotts figured a car would cost them more than \$5,000 a year to own and operate while their total transportation budget now amounts to only \$100 a month, including buses and car rentals for intercity and holiday transportation.

They say lacking a car has saved them money in other, unexpected ways. "It's so easy to just jump in the car and go places on an impulse and spend money you wouldn't have spent otherwise," says Bonnie.

Trip planning has been so ingrained into the

Marriotts, it's second nature now. While father Tim buses to work at Fort Edmonton Park, Bonnie may take the kids shopping at Westmount Mall, which is close enough to walk to. "We've worn out five strollers so far," laughs Bonnie.

"We combine trips. We schedule all the doctor or dentist appointments together, stop off at the library and go grocery shopping at the same time and take a cab."

The Marriotts get a lot of ribbing from people who can't imagine how they can stand to be without at least one car but Tim and Bonnie say it really is a question of your point of view and what you've come to think of as convenient.

Tim does admit that his notion of what's convenient needs some adjusting as time goes by. Until the 1970s, he says, Edmonton was fine for people who didn't have cars. "But the city is getting worse and worse as far as the bus system is concerned – bus connections aren't as good as they were – you can't get across town in less than an hour anymore. And the city needs much better and easier pedestrian routes."

Both feel that the disappearance of the neighborhood grocery store has been a blow to pedestrians. Winter travel on foot over

HOPE for the Future

The student environment club at Victoria Composite High School in Edmonton knows what's environmentally correct. Members of HOPE (Help Our Planet Earth) set up a worm composter in the science storage room for lunch scraps and successfully lobbied to remove foam containers from the school cafeteria. They plan to plant a tree to celebrate graduation this spring.

Like most Alberta teenagers, almost all HOPE students have a driver's licence or a learner's permit. They are struggling with the conflict between their knowledge that cars are bad for the environment and the reality that cars are a tremendous convenience. Some are trying to get along without cars. Others find they can't.

Tad Hargrave is one of the few club members who does not have a driver's licence. He says he's too lazy. It takes time and money for the driving lessons that earn insurance deduc-

tions. And then there's the gas, the shock absorbers and the oil changes. "If you have a car, you're always paying for it. With a bike, you buy it and that's it." The bike is also a one-time polluter, he notes – just what it takes to make it. A car pollutes every time you drive.



Keri Zwicker

Hargrave is not an evangelist. He's philosophical about his brother's decision to buy a car. "He's got a job and has to get from place to place. Cars pollute a lot, but when you live in a society like this, we have schedules and we're run by them. Cars are very quick."

Hargrave lives close to Victoria Composite near the city core. Other club members have farther to go. Keri Zwicker drives every day from her home in the west end to avoid frigid bus-stop vigils on winter mornings. Her enormous beat-up Chevy van ferries eight other students from her neighborhood. It bugs her to share the road with people driving alone. "I'd really feel guilty to drive alone," she says. "We yell at those people – through closed windows I mean – but we yell at them."

HOPE president Laurel Nikolai lives in Sherwood Park and drives to school with her father who teaches at Victoria Composite. She takes the family car on weekends. "I don't feel great about it, but I don't have any choice. The buses don't run very regularly and hardly at all on Sundays." Late at night, she says, she would be afraid to ride the bus by herself. She says she'll never drive just to drive, but can see the day when she may need to have a car of her own.

**"If you don't own a car,
you live a more relaxed lifestyle."**

uncleared sidewalks and mounds of snow pushed over the curb by city graders is difficult at best. And being a pedestrian in Edmonton can be downright dangerous, especially competing against vehicular traffic more intent on arriving on time than watching for pedestrians.

Wheeling Along

You don't have to explain how scary traffic can be to another six-year-old Edmontonian, Emily Collier, who almost daily gets an axle-level view of traffic from her seat in a bicycle trailer towed by her father, John. Emily will casually offer a visitor a vivid description of what a city bus tire looks like as it slowly squeezes you over toward the curb.

But, if you want to travel with dad, you have to go by bike. Past president of the Edmonton Bicycle Commuters Association, John doesn't own a car. Year-round, he rides five kilometres from home to work each weekday and rides the same distance back at night. When he



John and Emily Collier

Aimee Frost, a member of HOPE and a drama student, says she will need a car for sure. She and her sister already share one to drive to school. "I can't see myself without a car in about four years. Theatre has a lot of crazy hours and I'll be moving around a lot."

"The way our society is heading, there's almost no other option," concludes Julie

Dobson. "The car is quick and easy. You just put the gas in it and you've got transportation to and from work, school, the movie theatre. It's just such a convenience people aren't going to give it up."

Lynn Zwicky



Laurel Nikolai



Julie Dobson

takes care of Emily, he swings by the school with the trailer (beach ball in the inside pocket, extra clothes in the back) to pick her up.

John's relationship with the automobile is a love-hate affair. On the one hand, he admits to a "real aversion to the automobile" but, on the other hand as an auto mechanic, he earns his living "pulling wrenches on British cars."

"It's incredibly satisfying to get somewhere under your own steam. The exercise improves your mental outlook and it's not hard work. It's good karma," says John, who also claims it's much easier to ride city roads on a bicycle than in a car – "you don't feel pressured the way you do in a car."

John echoes the Marriotts' thoughts about making lifestyle choices. He shops at local supermarkets and feels more a part of his community as a result. He also agrees that he saves more than \$5,000 a year not owning a motor vehicle.

"It's not that I'm opposed to cars totally but what we use them for is appalling – like driving to the corner just to get some milk or making four or five trips to do something that with a little planning could have been done with one trip. Car owners drive all over town to do things simply because they can," John says. "If you don't own a car, you live a more

relaxed lifestyle."

Cycling brings John a great deal of pleasure; even at -30°C with rutted snow mounded all over the streets. He acknowledges that cycling isn't for everyone – "you can walk to work, take the bus, live closer to work." His cycle mania doesn't prevent him from renting or borrowing a motor vehicle when he needs to move big or heavy loads or when he wants to take trips out of the city. In fact, John says he would buy a car if he did a lot of camping or if he lived in the country.

John has been cycling and walking as his only means of transportation for more than five years. The first year, before he appreciated the virtues of year-round cycling, he cycled only in summer and rode the bus in winter.

"Giving up your car is a big lifestyle change but it's a change for the better. If you have a car, it takes a lot of willpower to ride a bike instead.

"I know if I did have a car and I got up on a cold winter morning and I had to choose, I'd choose the car – it's so easy, it's so convenient, it's so seductive. But, once you've been on the bike for 10 minutes, you feel really great," John says.

"I studied the Friends of the Earth's guide to the most energy-efficient vehicles and bought one that could get me from Edmonton to Calgary and back again on a single tank of gas."

"Cycling is such a fun way to get around. It's close to the environment. It's the perfect vehicle for urban spaces."

Driving to the Country

Well, there's the rub. What if you don't live in an urban space? You probably need a car to get to work. The Marriotts and John Collier would suggest finding a place to live closer to work. But Brian Staszewski says if you live in the country, you can reduce or eliminate other environmental impacts and more than compensate for any environmental damage you do with your motor vehicle.

He should know. As executive director of the Environmental Resource Centre in

Edmonton since he founded it in 1979, Brian conducts environmental and energy audits for government and industry. He also lives on a quarter section of land he owns on the North Saskatchewan River outside Thorsby, about 70 kilometres by road southwest of Edmonton.

"I looked at my whole lifestyle and figured my entire energy consumption," Brian says. "I built an R2000 and beyond house.

"I have a great big garden and I produce my own food. I'm picking up my steer from the butcher next week. I have a year's supply of food stored at home.

"I studied the Friends of the Earth's guide to the most energy-efficient vehicles and bought one that could get me from Edmonton to Calgary and back again on a single tank of gas. Now I'm switching to a small propane-powered truck."

Brian feels urban people do not appreciate where their food, energy and other utilities come from, or what it takes to produce or supply them. Rural families drill their own water wells, create ponds and dugouts or haul their own water. They must build their own wastewater systems and pay to have electrical services constructed and connected.

"I've reduced my energy consumption considerably and I'm out there every day helping institutions reduce their consumption as well.

So as an individual, Brian says he uses a lot less energy, including the operation of his vehicle, than many people who live in the city.

"You give up a lot to live in the country – restaurants, swimming pools, nice soft things – but it's well worth it for me. I get my own personal energy from communing with nature. I get recharged and reconnected. My family comes from a rural background and it's ingrained in me. I hate coming to the city – if I had my druthers, I wouldn't.

"I need a car. I could not function without one."

Eric Bailey is a professional writer specializing in outdoor and interpretive writing, working from Lacombe.



Brian Staszewski

TOMORROW'S CAR

Technological Solutions



So you've been putting off buying a new car because you're waiting for something "environmentally friendly"—an electric automobile, perhaps, or one powered by the sun. Or maybe you're in the market for an alternative-fuel vehicle, a car or truck that runs on methane, propane or natural gas.

You can stop waiting.

For starters, there is no such thing as an environmentally friendly car: all cars pollute

—the only difference is to what degree. As for cars powered by battery, sun or alternative fuels, they already exist. But unless you live in a place where it's always warm and sunny, or plan to make only short trips, you're probably better off holding on to whatever you're driving now.

Besides, if you bought your car after 1988, it's about as friendly as a gasoline-powered vehicle can get and still be reasonably priced and easy to operate: although cars have been getting steadily cleaner, it wasn't until 1988

that Canada began requiring higher pollution-control standards. Indeed, the case can be made that cars sold new in Canada after 1988 are, if not environmentally friendly, at least friendlier: according to Rob Taylor of the Alberta Motor Association, it takes 26, post-1988 vehicles to pollute as much as a single 1972 vehicle.

Dashboard Solutions

What's making the biggest difference are advancements in pollution gear and emis-

sions control equipment technology, technology that is most apparent at the dashboard level. The lights that announce that the battery is dying, the oil tank is empty, the engine is about to fail – those “see-dealer-produce-credit-card-lights,” as University of Alberta mechanical engineering professor David Checkel calls them – combine to make today’s cars not only cleaner and more efficient, but also more durable and reliable than their predecessors.

“For most of the little things that go wrong, the car just recalibrates itself and carries on,”

Checkel says. “But when something causes it to say, ‘I can’t fix this internally; I’m going to turn on the engine light,’ that’s because there is some serious failure. Whenever that light comes on, your car is not running as well as it could be, and its level of pollutant production goes up enormously.”

For the time being, the car that can fix itself – or at least communicate when it needs a repair – is the most practical option for the environmentally conscious car buyer. Consumers who can afford to be impractical have considerably more choices: most major car

manufacturers have either introduced or plan to introduce prototypes of electric cars. Volvo just unveiled its hybrid prototype, the ECC, a car that can run on diesel fuel or electricity. It’s a bit pricey, though: Toronto-based Volvo spokesman Ken Barratt was reluctant to give exact numbers but he did agree that \$100,000 isn’t an unreasonable estimate.

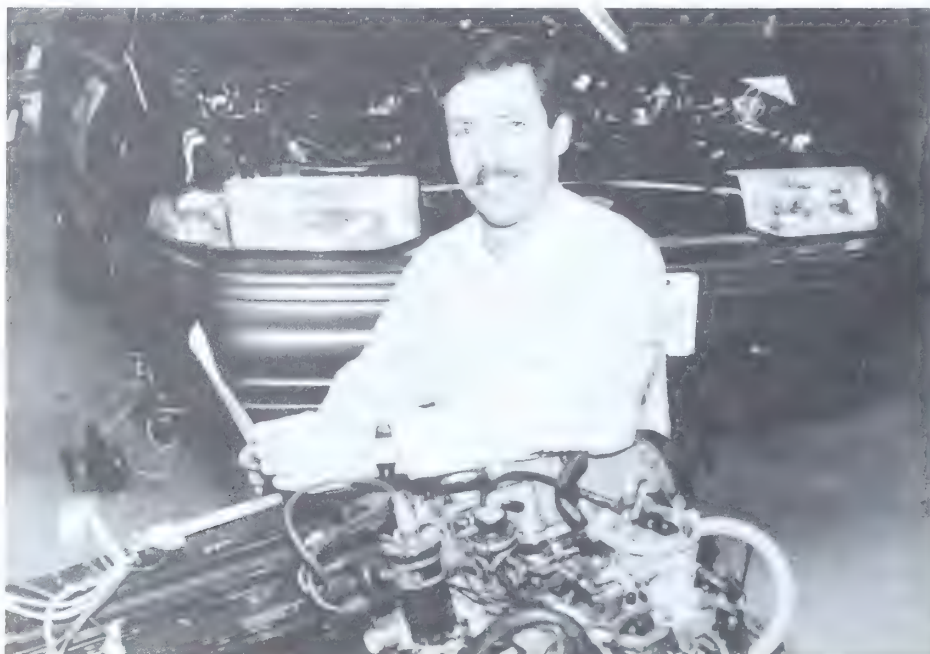
Exploring the Fuel Options

General Motors, which introduced an electric car prototype several years ago, expects to have one on the market by the end of this decade. It already markets a Chevy Lumina that runs on methanol – and sells for \$2,000 more than its petroleum-powered counterpart. Spokesperson Tayce Wakefield, also in Toronto, says government grants cover the additional cost.

But while the government will help you buy the car, you’re on your own when it comes to finding a service station that sells methanol. “Methanol fuel is not widely available,” Wakefield says. “If you’re using (the car) as a taxi service where you can get back to the station, you’re okay. But if you want to drive to Calgary, you might be able to get there, but you might not be able to get back.

“It’s one of those chicken-and-egg questions,” she adds. “If there’s no market, why should you spend money putting one in place? If there’s no fuel available, why would you want to buy the car?”

Until recently, that attitude pretty much governed the automotive industry, guaranteeing the prominence of petroleum-powered



David Checkel

Fuel-Efficient Driving Tips

The best way to save gas and reduce emissions is to leave your car at home. The next best way is to drive efficiently.

Dave Supruniuk of Alberta Energy’s Energy Efficiency Branch helps train department staff and commercial fleet operators in fuel-efficient driving techniques. According to data from the training program, the average driver can easily save 20 per cent on gas. His advice:

- Anticipate traffic light changes. Using your brakes wastes fuel. “If you slow down beforehand and start coasting, the vehicle is using very little fuel.”

- A steady pressure on the gas pedal is best. On the highway, it is better not to use cruise control.

- Turn off your car if you will be idling for more than 10 seconds. After 10 seconds, it takes less fuel to restart the engine. Supruniuk does not recommend turning off the engine at lights – you want to be ready to go. But if you’re picking someone up, loading your car or in a traffic jam, turn it off.

- Don’t tail the driver in front of you. Leave yourself room to manoeuvre so you don’t have to use the brakes.

- Maintain your momentum around corners.

- Accelerate quickly and smoothly. “The more quickly you get up to cruising speed, the more quickly you get to the most efficient operating range between 50 to 70 kilometres per hour.”

- Maintain proper tire pressure to reduce road friction and extend the life of your tires. This alone can save you five per cent on your gas.

- Use premium multigrade or synthetic oil to reduce engine friction – another big winner at three per cent fuel savings.

The Energy Efficiency Branch also offers a free audit service for fleet operators. The audit includes tips on driving efficiently, and advice on new vehicle selection, efficient routing and vehicle maintenance. It also looks at potential for switching to natural gas, which is a cheaper fuel than gasoline. The seven-year-old service has 26 fleet audits under its belt. With fuel switching, it has saved fleet operators an average of 34 per cent on fuel expenses.

Lynn Zwicky

vehicles, which are relatively inexpensive and for which there is a set infrastructure: gas stations. But with increasing concern about fuel emissions destroying the ozone layer and, in some places, rendering the air unfit to breathe, auto manufacturers are being forced to respond to emerging markets: Ford, Chrysler and GM all sell alternative-fuel vehicles. More significant still, in the quest to develop practical and affordable electric engine technology, they are, for the first time in history, working together.

Although alternative fuels such as natural

do to your electric bill.

"By 1996, we'll have (electric cars) for commuters, but not in Edmonton," Checkel says. "It's a really restricted niche market, a very small market. It's not really practical or a general purpose commuter-type vehicle."

Still, it's an interesting enough proposition that Checkel and his students have been working since last spring to convert a standard Ford Escort station wagon to a hybrid car – one that can run on both electricity and gasoline – as part of a competition sponsored by Ford, the U.S. Department of Energy and the U.S.-

**What will work in California
definitely won't work in Alberta. Consider,
for instance, the solar car. "Much of the year the
sun isn't even strong enough to keep
cars warm, let alone running.**

gas and propane have been available for quite some time, and electric car technology dates to the late 19th century, it's only recently that consumers and manufacturers have begun to take a serious look at anything other than petroleum. The sense of immediacy is largely a response to stringent new emissions regulations in California, where, beginning this year, carbon monoxide emissions must be cut in half on all new cars. By 1998, two per cent of cars sold by any manufacturer selling more than 5,000 cars in the state will have to be emissions free. By 2003, the number will jump to 10 per cent.

What is required in California, however, won't be remedies everywhere. More to the point, what will work in California definitely won't work in Alberta. Consider, for instance, the solar car. "Much of the year the sun isn't even strong enough to keep cars warm, let alone running," says the U of A's Checkel. While solar-powered auto races are popular in such places as Florida and Australia, the cars themselves are designed more for show than travel. "They're not practical to do what a car does, which is carry people and take them places," Checkel says, "and in Edmonton, they're not practical at all."

Slightly higher on the practicality scale is the electric car. But if you think you have trouble starting your car's 12-volt lead-acid battery in below-zero weather, consider the possibilities of trying to get a 170-volt nickel-cadmium, or nicad, battery going. And you don't even want to consider what it's going to

based Society of Automotive Engineers.

Estimated cost of the project: \$250,000, of which \$30,000 has been used to purchase nicad batteries. To accommodate 317 kilograms of batteries, which are encased in a steel box ventilated outside the car, the students had to remove the back seat, transforming a family car into a two-seater with slightly more trunk space than normal.

By the time it is completed, the car will have a maximum speed of 145 kilometres per hour, though at that speed the estimated range – 80 kilometres on battery power – will drop considerably. If a driver wants to travel 80 kilometres without having to recharge (which can take up to six hours), the ideal speed is 70 kilometres per hour, or up to 90 kilometres per hour under highway driving conditions.

Where Did We Get These Gas Guzzlers?

Back at the turn of the century, when cars were just coming into use, engines that ran on electricity and steam were far more popular than those powered by gasoline, mostly because electricity and steam were more advanced technologies. Still, neither was ideal: you couldn't go much farther than 48 kilometres on one charge of electricity, and those who drove steam cars had to stop constantly to take on water.

What really pushed the gasoline-powered car ahead was the development of the electric starter: no longer did a driver have to hand crank the starter to create the spark that would ignite the fuel and air mixture to burn in the

Don't Junk It Yet

A new car might be cleaner and get mileage, but before you junk your clunker, consider tuning it up.

So says George Iny, president of the Montreal-based Automobile Protection Association, which is as concerned about car waste as it is about tailpipe emissions.

"There's no question that the old clunkers in bad condition are polluters," Iny says, "But an old clunker that you have tuned up properly might not be as big a clunker as you think."

And keeping it on the road – and out of the junkyard – makes environmental sense. Although 80 per cent of your car (the steel) is recycled, and automobile manufacturers are developing ways to recycle the rest, for now much of the remaining 20 per cent ends up as more-or-less toxic waste in the landfill.

"A hulking panel of steel is not a problem," Iny says. "It rusts. That's it. But a battery leaking into the ground or tires that can catch fire are a problem. CFCs leaking into the atmosphere are a problem."

The root of the problem is that plastics are not easily recyclable and until recently, no one was working to change that. But last year, Chrysler, Ford and GM banded together for the Vehicle Recycling Project, a goal of which is to develop cars that can be easily disassembled.

That doesn't mean your car would fall apart at a traffic light if it were hit from behind, only that it will be easier – and more economical – to recycle what is known in the vernacular as "automobile fluff," – the interior trim, plastics, fabric and other non-metallic car parts.

Bruce Reid, director of GM's environment office, is reluctant to say whether car waste will ever be completely eliminated. "I know we'll be able to get rid of a large part of the remainder," he says, "and the remainder is 20 per cent or less."

engine – the process we know as internal combustion. Also, gasoline-powered cars could go farther and faster, and, perhaps most important, they cost less to operate. By 1912, internal combustion had far outdistanced electricity and steam as the engine of choice. The auto age had begun, and with it, the slow deterioration of the ozone layer.

Still, there is no reason to believe that the situation would be markedly improved had the electric engine become the engine of choice: while battery-powered cars emit no exhaust, if the power to recharge the batteries is generated from a coal-firing station, equally toxic fumes are going to be spewed into the atmosphere. “If you look at fossil fuels and



“If you really want your car to be environmentally conscious, park it. The only green car is a parked car.”

their impact, coal is the worst and natural gas is the best with regard to carbon dioxide emissions,” says the AMA’s Taylor.

Ethanol-blended gasoline is available through Mohawk gas stations in Alberta, and can be used without engine modification. As well as conserving non-renewable fossil fuels by using ethanol produced from grain, the blended gas reduces carbon dioxide and carbon monoxide emissions. Interchem Industries, an American company with a branch in Vancouver, has recently introduced Biodiesel, a diesel fuel made with vegetable oil and methanol. Not at Canadian pumps yet, the new product is available in bulk through the Vancouver office. Interchem claims negligible sulphur emissions and a 75-per-cent reduction in particulate emissions. Like ethanol-blended gasolines, Biodiesel can be used without engine modification.

Both Taylor and Checkel believe that natural gas is Alberta’s most plausible alternative to petroleum. At roughly 23 cents a litre, it’s half the cost. It also produces half the amount of pollutants, and isn’t affected by cold temperatures. Equally important, natural gas is a proven technology – vehicles have been running on it for 20 or 30 years. Natural gas tanks, however, are considerably heavier than their petroleum counterparts. While at least one company, Calgary-based EDO Canada Ltd., an aerospace manufacturing firm, is develop-

ing a tank that weighs approximately 18 kilograms, for the time being converting your car to natural gas will add about 140 kilograms, roughly the weight of two extra passengers. Also, the natural gas fueling station network, like that for methanol, is almost nonexistent.

In Edmonton, Hi-Tec Fuel and Automotive Ltd. will convert your car to natural gas for less than \$4,000 (before government grants), and Northwestern Utilities will rent you a compressor for \$49 a month so you can fill your tank from your own natural gas supply, at a cost of about 10 cents a litre. It’s a time-consuming process – filling up at home can take anywhere from four to eight hours, but depending on where you live, finding a service station that sells natural gas can take even longer.

According to Northwestern Utilities, only six service stations in Alberta sell natural gas: three in Edmonton, two in Calgary and one in Medicine Hat. In other words, natural gas is great if you have a big gas tank, get terrific mileage and are driving exclusively in Edmonton, Calgary or Medicine Hat, or from one to another. Converted cars can still run on petroleum, but if your point is to be energy efficient and cut down on emissions, switching back and forth defeats the solution.

Northwestern Utilities says the ideal natural gas customer is someone whose vehicle consumes more than 350 litres of fuel per

month, a standard with which Checkel agrees.

“You shouldn’t be too foolish about being environmentally clean,” he says. “If you’re not burning more than \$50 a month in gasoline, you should stop and think – obviously you’re not producing much in pollution; why bother spending a lot of money to make it that little bit cleaner, unless you definitely want to do it for show.”

If you’re interested in being environmentally clean for show – and for relatively little money – there are more practical ways to go, as a quick glance at the Alberta Motor Association’s brochure, *The Motorist’s Environmental Code of Practice*, indicates.

Among the top suggestions for reducing automobile pollution: use your car less. Cut out short trips, combine trips so you’re making a loop instead of making a series of short trips, carpool, bicycle, walk or take public transportation.

If you have to drive, turn off the ignition if you’re waiting for more than a minute – restarting consumes less fuel. Similarly, warming up your car for more than 30 seconds pollutes unnecessarily, even in cold temperatures. In the summer, use water with a bit of soap instead of windshield wiper antifreeze. And never dump used motor oil down the drain, in the sewer or on the ground. Instead, return it for recycling.

But if you really want your car to be environmentally conscious, says Angela Bischoff of EcoCity, park it.

According to Bischoff, manager of the Edmonton-based non-profit environmental lobby group, car transportation will never be considered “green” until the internal combustion engine is put to rest and cars somehow become healthy and quiet, “things that are already true of bicycles and walking.

“The only green car is a parked car.”

Debby Waldman is an Edmonton writer.

AROUND THE PROVINCE

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This has brought questions and may have led to other signs on neighboring properties, Pybus says.

She gives talks at schools about her work, and enjoys telling students how they can improve habitat.

Special Places 2000

"Special Places 2000: Alberta's Natural Heritage," is a draft plan to establish a network of parks and other protected natural areas by the year 2000. The plan sets out a framework and strategy for achieving protection of representative landscapes, and also addresses the goals of outdoor recreation, heritage appreciation and ecotourism.

The document was presented by the Alberta government to a historic tri-council meeting of federal and provincial ministers responsible for fish and wildlife, parks and the environment. Special Places 2000 is the first of several government initiatives planned to protect representative examples of Alberta's natural landscapes.

There will be public hearings before the plan is implemented.

Environmentalists have praised the proposal, seeing it as an acknowledgement by the government of the urgency of preserving more of Alberta's natural heritage.

ENVIRONMENT UPDATE

Egg Island Ecological Reserve

Egg Island, located in Lake Athabasca about 50 kilometres northeast of Fort Chipewyan, was approved by order-in-council on October 15, 1992 as Alberta's 14th ecological reserve.

About two hectares in size, Egg Island is designated a "special ecological reserve" because it contains the only known nesting site in Alberta of the Caspian tern, a colonial nesting species. The national Committee on the Status of Endangered Wildlife in Canada lists the Caspian tern as a rare species.

California gulls also nest on the island, and arctic terns and parasitic jaegers can be observed in the area.

Ecological reserves protect unique examples of Alberta's natural, biological and physical features or representative examples of Alberta's natural landscapes.

Emerald Awards

Do you deserve an Emerald Award? Should someone you know be recognized for their contribution to preserving, protecting or enhancing our environment?

"Emeralds" are awarded to Albertan organizations, corporations and individuals for commitment to environmental excellence in nine categories:

- environmental products
- environmental services
- large business/industry
- small business
- media
- education
- individual-volunteer
- individual-business
- not-for-profit/community organization

Nominations close March 19, 1993 and the Emerald Awards will be presented at a reception at Calgary's Jack

Singer Concert Hall June 7, during Environment Week.

For nomination forms contact: Alberta Foundation for Environmental Excellence, 600, 12220 Stony Plain Road, Edmonton, T5J 3L2, 482-9200 or fax, 482-9100 or 2400, 700 - 2nd Street S.W., Calgary, T2P 0S7, 267-0556 or fax, 264-2871.

Hot Conferences

Alberta Teachers' Association's Environmental and Outdoor Education Council 17th Annual Conference March 19-21, Jasper Park Lodge. Contact: Cal Kullman, 80 Bralorne Cres. S.W., Calgary, T2W 0Y8, 255-2613.

Sixth Institute Conference on Natural Resources Law May 13-14, Ottawa. Range of topics on multidisciplinary environmental decision making and conflict resolution. Co-sponsored by the Canadian Institute of Resources Law and Faculty of Law, University of Ottawa. Contact: Conference Co-ordinator, Canadian Institute of Resources Law, 430 Bio Sciences Bldg., University of Calgary, T2N 1N4, 220-3974 or fax 282-6182.

Alberta Association of Canadian Institute of Planners Annual Conference May 13-16, Medicine Hat. Theme is "Planning and the Land-Water Interface" and sessions will include flood management, river valley development, groundwater contamination, recreational development, municipal approaches to environmental assessment and new environmental legislation. Contact: Steve Welling, 623 4th St. S.E., Medicine Hat, T1A 0L1, 527-3326 or fax 528-2493.

Freshwater, Marine and Wetland Interfaces May 30-June 3, Edmonton. First joint annual meeting of the American Society of Limnology and Oceanography, and the Society of Wetland Scientists. Contact:

Environmental Research and Studies Centre, CW401L Biological Sciences Bldg., University of Alberta, T6G 2E9, 492-8161 or fax 492-8160.

Second Annual Conference of the International Association of Public Participation Practitioners Aug. 31-Sept. 1, Kananaskis. Conference will focus on three themes: public processes used in legislative and regulatory review; indigenous people's participation and community involvement; and assessing the effectiveness of public participation. Contact: IAP3 Local Organizing Committee, 8th Flr., 9942-108 St., Edmonton, T5K 2J6, 427-5598 or fax 422-9684.

New Institute Publications

The Canadian Institute of Resources Law has published the proceedings of the Fifth Institute Conference on Natural Resources Law, *Growing Demands on a Shrinking Heritage: Managing Resource Use Conflicts*, edited by Monique Ross and J. Owen Saunders. (\$80 Cdn)

Energy Conservation Legislation for Building Design and Construction, by Adrian Bradbrook addresses the legal problems surrounding energy conservation, reviews existing legislation and recommends possible legislative changes. (\$20 Cdn)

Instream Flow Protection and Alberta's Water Resources Act: Legal Constraints and Considerations for Reform, by Steven Ferner is the 1991 winning entry in the institute's annual national Essay Prize competition. It examines five techniques in Alberta's Water Resources Act to protect instream flow, and suggests three changes to the Act that would enhance the protection of instream flow. (\$10 Cdn)

Copies are available from: Canadian Institute of Resources Law, University of Calgary, 430 Biosciences Bldg., Calgary,

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Alberta Environment, 9820 - 106 Street, Edmonton, Alberta T5K 2J6



ENVIRONMENT UPDATE

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T2N 1N4, 220-3200 or fax
282-6182. (Include GST for
orders within Canada; add \$2
per book for orders from
outside Canada.)

Banff Environment Courses

The Banff Centre for Manage-
ment is holding intensive three-
day courses on *Environmental*

*Risk Management and Hazard-
ous Waste Management* April
14-16. The human health and
environmental costs that result
from investments, plans and
projects will be addressed, and
practical solutions will be
offered. One-day workshops are
also offered April 18 and 19.
Cost: \$695/ three-day; \$495/
one-day.

Other 1993 courses:

*Advanced Environmental
Conflict Resolution*, Sept 19-24;
Valuing Natural Resources,
Oct 3-8;
Ecotourism, Nov 2-5.

For more information,
contact Patrick Jackman
(403) 762-6133.

LETTER

Dear Editor:

Please tell Lynn Zwicky and
Glenn Rollans that I enjoyed
their work in your last issue.
But Lynn's reference to the
dangers that the South presents
to the planet's future deserves
recasting. Their activity is so
potentially threatening largely, I
suspect, because:

1. The North has used up
practically all the earth's
assimilative capacity; and
2. It is us and our corporations
whose voracious demand for the
South's resources and products
have induced much of the
dangerous activity.

Yours truly,

Phil Elder
Associated Dean and Professor of
Law
University of Calgary

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